## PRIOR ART REJECTIONS

*Description of the Present Invention*

In a conventional rotor for an automotive alternator, a field winding 15 with a circular cross-section is used. The field winding 15 is drawn out onto a cylindrical portion 16a in rows at an angle "a" relative to a plane that perpendicularly intersects the axial center of the cylindrical portion 16a forming a first layer (Fig. 9). After the first layer of winding is formed, a second layer is lined up in rows at an angle "b" relative to the plane that perpendicularly intersects the axial center (Fig. 10). Thus, the winding in the second layer is wound on top of the winding in the fist layer forming undesired winding configurations. For example, portions of the wire in the second layer are positioned in the exact center between the adjacent portions of the wire in the first layer (Fig. 11, first configuration), the wire in the first layer and the wire in the second layer are stacked radially (Fig. 12, second configuration), or shifting from the first (second) configuration to the second (first) configuration. Consequently, radial irregularities arise within each lap of the field winding 15 and eccentricities occur in the configuration of the multi-layered portion, which increases vibrations during high-speed rotation.

The rotor of the present application, on the other hand, eliminates the eccentricities in the multi-layered portion of the field winding and reduces vibrations during high-speed rotation. As shown in Figure 1 of the present application, a field winding 20 has a rectangular cross section, wherein a pair of opposite flat surfaces are parallel. The winding configurations of the present application, unlike the conventional winding configurations, are desirable. For example, portions of the wire in the second layer are positioned in the exact center between the adjacent portions of the wire in the first layer (Fig. 3, first configuration), the wire in the first layer and the

wire in the second layer radially overlap each other across the entire region in the axial direction (Fig. 2, second configuration), or shift from the first (second) configuration to the second (first) configuration. Since the field winding 20 has a rectangular cross-section, the field winding 20 is wound with the radially "inner circumferential side" of the winding in the second layer in surface contact with the radially "outer circumferential side" of the winding in the first layer.

Moreover, it is necessary to wind the field winding in the present invention such that the space factor is increased, since the field winding is wound in a limited space, which is enclosed by the claw-shaped poles and the base portions of the field cores. The increase in the space factor leads to an increase in output and rigidity. Further, it is necessary to wind the field winding in the limited space to widen the space, which is enclosed by the claw-shaped poles of the field cores and the field winding. The vibration-suppressing ring and the magnet are easily positioned into the field cores by widening the space. Thus, the rotor of the present application increases space factor, space, output and rigidity, and reduces electromagnetic noise.

*Analysis*

The Examiner has rejected claims 1 and 2 under § 103(a) over APA in view of Hiroshima (hereinafter "Hiroshima combination"), and further in view of Harris '265. Applicant traverses this rejection.

The Examiner asserts that the Hiroshima combination teaches the claimed invention. However, Hiroshima fails to teach that the 1) "field winding has a flat rectangular shape," and 2) "field winding [is] wound onto said cylindrical portion of said bobbin wherein said pair of opposite flat surfaces face the inner circumferential side and the outer circumferential side, respectively, relative to a radial direction," as required by claim 1.

Hiroshima is directed to a winding apparatus and method which deforms a wire during winding. As described in column 4, lines 57-68 and column 5, lines 10-11 and illustrated in Figure 8 of Hiroshima, the sectional shape of the wire that is wound around the bobbin is square. Indeed, the field winding of Hiroshima does not have a "flat rectangular shape." Since the sectional shape of the wire is square, the square wire does not have a flat shape when wound onto the cylindrical portion of the bobbin such that a "pair of opposite flat surfaces face the inner circumferential side and the outer circumferential side, respectively, relative to a radial direction." Moreover, Hiroshima does not teach that the wire is wound onto the bobbin fitted over the base portion of each field core having claw-shaped magnetic poles.

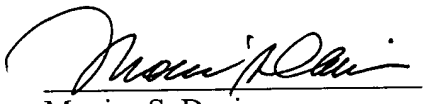
Conversely, as illustrated in Figure 1 of the present application, the field winding 20 has a rectangular cross section, wherein opposite flat surfaces are parallel. Accordingly, portions of the wire in the second layer are positioned in the exact center between the adjacent portions of the wire in the first layer (Fig. 3, first configuration), the wire in the first layer and the wire in the second layer radially overlap each other across the entire region in the axial direction (Fig. 2, second configuration), or shift from the first (second) configuration to the second (first) configuration. Since the field winding 20 has a "flat rectangular shape," the field winding 20 is wound with the radially "inner circumferential side" of the winding in the second layer in surface contact with the radially "outer circumferential side" of the winding in the first layer. Therefore, claim 1 is patentable over the Hiroshima combination.

Applicant submits that dependent claims 2 and 3 are patentable for the same reasons as mentioned above with respect to claim 1.

In view of the foregoing arguments, reconsideration and allowance of this application are now believed to be in order, and such action is hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,



Monica S. Davis
Registration No. 44,492

SUGHRUE, MION, ZINN,
MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, D.C. 20037-3213
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

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